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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/466,035	12/17/1999	MATTI SALLBERG	930049.458C1	9697

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EXAMINER

WEHBE, ANNE MARIE SABRINA

ART UNIT	PAPER NUMBER
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1633

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/466,035

Applicant(s)

SALLBERG ET AL.

Examiner

Anne Marie S. Wehbe

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 12, 13 and 26-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 12, 13 and 26-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's amendment filed on 7/10/06 have been entered. Claim 30 has been canceled. Claims 1-5, 12-13, and 26-29 are pending in the instant application. An action on the merits follows.

It is noted that those sections of Title 35, US code not included in this action can be found in the previous office action.

Information Disclosure Statement

Applicant's IDS filed on 1/9/06 has been considered by the examiner. An initialed copy is attached to this office action.

Claim Rejections - 35 USC § 112

The rejection of claim 30 under 35 U.S.C. 112, second paragraph, is withdrawn in view of the cancellation of this claim.

Claim Rejections - 35 USC § 103

The rejection of claims 1-5, 12-13, and 26-30 under 35 U.S.C. 103(a) as being unpatentable over WO 95/07994 (1995), hereafter referred to as Dubensky et al., in view of Hu et al. (1991) AIDS Res. Hum. Retrovir., Vol. 7 (7), 615-620 is maintained. Applicant's arguments have been fully considered but have not been found persuasive in overcoming the instant rejection for reasons of record as discussed in detail below.

The applicant reiterated their arguments that since Dubensky et al. does not teach the prime boost strategy taught by applicants and that Hu et al. does not teach using the particular vector systems claimed by applicants, improper hindsight reasoning was used to construct the rejection of record. In addition, the applicant argues that motivation for combining the teachings of the cited references was not provided, citing *In re Kotzab*. In addition, the applicant argues that instead of providing a specific motivation to combine the teachings of references as required, and that the office has improperly relied upon common knowledge and common sense to establish motivation citing *In re Rouffet* and *In re Lee*.

In regards to the argument that neither Dubensky et al. nor Hu et al. teach each element of the instant invention, it is noted that the test for combining references is not what the individual references themselves suggest, but rather what the combination of disclosures taken as a whole would have suggested to one of ordinary skill in the art. *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The applicant states that *In re McLaughlin* does not hold that common knowledge is a substitute for evidence that the art suggests the desirability of making the claimed combination. In response, it is noted that the *In re McLaughlin* and *In re Nilssen* were cited to indicate that each reference individually is not required to teach each element of the invention or make a specific suggestion to combine its teaching with another

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reference. The office understands its burden to provide a specific motivation to combine the teachings of the two references and has met its burden. Far from relying on “common knowledge” or “common sense” as implied by the applicant, the rejection of record clearly states that the motivation to combine the teachings of Dubensky et al. and Hu et al. can be found in the teachings of Hu et al. As stated in the previous office action, Dubensky et al. teaches alphavirus vectors and layered eukaryotic vector initiation systems comprising sindbis, retrovirus or adeno-associated virus vectors capable of expressing a viral antigen, and the administration of alphavirus vectors or layered eukaryotic vector initiation systems capable of expressing a viral antigen to warm-blooded animals in order to generate an antigen-specific immune response, wherein the viral antigen is derived from HIV or hepatitis (see Dubensky et al., pages 8, and 33-40), Dubensky et al. only differs from the instant invention as claimed by failing to teach a prime-boost strategy of immunization. However, the rejection of record relies on Hu et al. for the missing teachings and further for the motivation to combine the teachings of Hu et al. with Dubensky et al. Specifically, the office has set forth that Hu et al. supplements Dubensky et al. by teaching that antibody responses against viral antigens can be increased by using a prime boost strategy where a subunit protein vaccine is administered either before or after the administration of a viral vector encoding the protein antigen (Hu et al., page 615 and page 617, Table 1). The rejection of record further identifies the specific motivation for combining the teachings of Hu with Dubensky as follows: the skilled artisan would have been motivated to use the prime-boost strategy taught by Hu et al. to induce immune responses against viral antigens based on the teachings of Hu et al. that boosting vector vaccines with subunit vaccines is more effective than immunization with vector alone.

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Thus, the rejection of record concludes that based on the motivation provided by Hu et al. for using a prime-boost strategy for immunization against viruses, it would have been *prima facie* obvious at the time of filing for the skilled artisan to supplement the immunization strategy using alphavirus vectors and layered eukaryotic initiation systems taught by Dubensky et al. by administering viral proteins prior to or subsequent to the administration of the vector. In view of the enhanced immune response observed by Hu et al. using the prime-boost strategy, the skilled artisan would have had a reasonable expectation of success in generating an immune response against a viral antigen by administering an alphavirus vector or layered eukaryotic initiation system capable of expressing a viral antigen either prior to or subsequent to the administration of viral protein. Thus, the rejection of record, clearly meets the standards in *In re Kotzab* for establishing a *prima facie* case of obviousness by particularly pointing out the reasons why the skilled artisan would have been motivated to combine the teachings of Hu et al. with those of Dubensky et al.

Further, in response to applicant's comments regarding the use of hindsight reasoning and the suggestion by applicants that the office has merely identified individual elements of the claims in the various references without providing motivation to combine, it is clear from the analysis of the rejection of record set forth above that the rejection of record relies on the specific motivation provided by Hu et al. that prime-boost vaccination against viruses result in enhanced anti-viral immune responses over that observed with vector or subunit vaccination alone for combining the teachings of Hu et al. and Dubensky et al. and not applicant's disclosure nor any "common knowledge" or "common sense".

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Furthermore, in regards to applicant's argument that Hu et al. cannot be combined with Dubensky et al. because Hu et al. teaches the use of a vaccinia virus encoding an HIV antigen and not a retrovirus, parvovirus, or alphavirus as claimed, and that Dubensky et al. does not teach a prime-boost strategy, it is noted that Dubensky et al. clearly teaches an alpha virus encoding an HIV antigen and the administration of the virus vector in vivo to stimulate HIV specific immune responses (see in particular Dubensky et al., page 151). In fact, Dubensky et al. even suggests boosting the initial vaccination with a second injection of the virus. Thus, contrary to applicant's assertions, since both viruses are clearly taught to elicit immune responses, and in particular anti-HIV immune responses, the skilled artisan would indeed have found it obvious to interchange the alphavirus taught by Dubensky for the vaccinia virus taught by Hu et al. In addition, applicant's statement that Hu et al. on page 617, second paragraph of discussion, teaches that vaccinia viruses are different from other viruses cannot be corroborated by any actual teaching of Hu et al. The office cannot find any actual teaching by Hu et al. that vaccinia viruses behave uniquely from other viruses. Page 617 contains two Tables, and no discussion. Page 618, second paragraph of the discussion in Hu et al. only states that primary immunization with vaccinia was more effective than primary immunization with subunit gp160 protein and that the strong anamnestic response observed in mice primed with recombinant vaccinia virus was likely due to the strong cell-mediated immunity generated by immunization with live viruses. There is no suggestion there that vaccinia viruses are unique among viruses as vectors for immunization. In fact, the strong cell-mediated immunity disclosed by Hu et al. applies to all viruses.

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Finally, in regards to applicant's arguments that Hu et al. did not provide conclusive results that a prime boost strategy increases immune responses, it is noted that the quotes from Hu et al. presented in applicant's arguments are taken out of context. Hu et al. discussed the results from previous experiments and then presented their own data. In regards to previous experiments, Hu et al. contrast the generation of antibody responses with the generation of neutralizing antibody responses. All the experiments described by Hu et al. generated immune responses, the issue was whether the responses generated were protective against infection. However, there is no such limitation in the instant claims that the immune response generated by protective or that neutralizing amounts of antibody are generated. Further, Hu et al. clearly teach that not only did they see enhanced antibody responses using their prime boost strategy, but that they were in fact able to generate cross-reactive neutralizing antibodies. Thus, Hu et al. certainly provides a reasonable expectation of success in obtaining an immune response against an HIV antigen by vaccinating with a recombinant virus encoding an HIV antigen followed by boosting with protein antigen.

Therefore, for the reasons set forth above, the rejection of record is maintained.

No claims are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication from the examiner should be directed to Anne Marie S. Wehbé, Ph.D., whose telephone number is (571) 272-0737. If the examiner is not available, the examiner's supervisor, Dave Nguyen, can be reached at (571) 272-0731. For all official communications, **the new technology center fax number is (571) 273-8300**. Please note that all official communications and responses sent by fax must be directed to the technology center fax number. For informal, non-official communications only, the examiner's direct fax number is (571) 273-0737. For any inquiry of a general nature, please call (571) 272-0547.

The applicant can also consult the USPTO's Patent Application Information Retrieval system (PAIR) on the internet for patent application status and history information, and for electronic images of applications. For questions or problems related to PAIR, please call the USPTO Patent Electronic Business Center (Patent EBC) toll free at 1-866-217-9197.

Representatives are available daily from 6am to midnight (EST). When calling please have your

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application serial number or patent number available. For all other customer support, please call the USPTO call center (UCC) at 1-800-786-9199.

Dr. A.M.S. Wehbé

ANNE M. WEHBE' PH.D
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read 'Anne M. Wehbe', with a long horizontal flourish extending to the right.